

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: George Wyszanski Examiner #: 65419 Date: 8/1
Art Unit: 142 Phone Number 308-2531 Serial Number: 09/82765
Mail Box and Bldg/Room Location: C23 7346 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

litigation
5,891,212

NO litigation

STAFF USE ONLY

Searcher: Mellerson
Searcher Phone #: 8-4453
Searcher Location: C23/4 302
Date Searcher Picked Up: 8/1
Date Completed: 8/1
Searcher Prep & Review Time: 2
Clerical Prep Time: _____
Online Time: 5

Type of Search

NA Sequence (#) _____
AA Sequence (#) _____
Structure (#) _____
Bibliographic ☒ _____
Litigation _____
Fulltext _____
Patent Family _____
Other _____

Vendors and cost where applicable

STN _____
Dialog _____
Questel/Orbit 50.12
Dr.Link _____
Lexis/Nexis 40.00
Sequence Systems _____
WWW/Internet _____
Other (specify) _____

Current session 01/08/2002

(C) QUESTEL 1994

QUESTEL.ORBIT (TM) 1998

01/08/02 20*54*19

Last connection: 01/08/02 14*38*21

WELCOME to QUESTEL.ORBIT- Your Guide to INTELLECTUAL PROPERTY
www.questel.orbit.com - Gateway, documentation & IP resource
- New Family displays w LEGAL option, etc.: INFO NEWS-PLUSPAT
- PlusPat Family w Legal Status in ONE record - INFO MFAMSTAT
- Now 9 million Images w PlusPat displays - INFO IMG-PLUSPAT
- Latest EP, WO & US Applications in One Alert: INFO APPALERT
- New Trademark file names, format & fields - INFO COMPU-MARK
- EPAPAT contains all unique EPTEXT data. EPTEXT file removed
- New Patent Citation Commands: easy & precise - INFO PATCITE
..FILE / ..INFO / ..GUIDE

Query/Command : FILE PLUSPAT

QUESTEL - Time in minutes : 1,13

The cost estimation below is based on Questel's
standard price list

	Estimated cost :	0.97 USD
Cost estimated for the last database search :		0.97 USD
Estimated total session cost	:	0.97 USD

Selected file: PLUSPAT

PLUSPAT - (c) Questel-Orbit, All Rights Reserved.
Comprehensive Worldwide Patents database
New Patent Citation Commands & FAM Citation Report - see INFO PATCITE
Last update of file: 2002/07/31 (YYYY/MM/DD) 2002-30/UP (basic update)

Search statement 1

Query/Command : US5891212/PN**** SS 1: Results 1**

Search statement 2

Query/Command : PRT FULL NONSTOP LEGALALL

1 / 1 PLUSPAT - ©QUESTEL-ORBIT - image

PN - US5891212 A 19990406 [US5891212]
TI - (A) Apparatus and method for making uniformly
PA - (A) AEROQUIP CORP (US)
IN - (A) TANG JIE (US); HESS GARY B (US); MUSZYNSKI MARK D (US); GOEHRING THOMAS S (US)
AP - US93129597 19970916 [1997US-0931295]
PR - US93129597 19970916 [1997US-0931295]
US89214597 19970714 [1997US-0892145]
IC - (A) B06B-001/20
EC - B01J-002/02
B01J-002/04
B01J-002/18
B22F-001/00A2S
B22F-009/08
C21D-009/00P
ICO - L22F-998/00 L22F-203:01
PCL - ORIGINAL (O) : 075335000; CROSS-REFERENCE (X) : 075345000 264009000
DT - Corresponding document
CT - US3986899; US4216178; US4302166; US4419303; US4628040; US4744821; US4787935; US4956128; US4981625; US5032172; US5147448; US5171360; US5226948; US5266098; US5411602; US5520715; US5560543; US5609919; US5746844; EP0467221; FR2595595; JP6-91204; SU1682039; WO9811588 P
Christian Henry Passow, A Study of Spray Forming Using Uniform Droplet Sprays, 1992, Thesis presented to the Department of Mechanical Engineering at MIT on May 5, 1992.
STG - (A) United States patent
AB - Uniform sized and shaped spheres are formed by applying a minute periodic disturbance to a low viscosity liquid material. Pressure forces the material through at least one orifice in a crucible as a steady laminar stream. The stream enters an enclosed controlled temperature solidification environment which contains at least one heat transfer medium. A charging means is applied to the stream as the stream exits the crucible and breaks into a plurality of spheres to deflect the spheres as they pass through an electric field. The enclosed controlled temperature solidification environment cools and substantially solidifies the spheres.

1 / 1 LGST - ©LEGSTAT

PN - US 5891212 [US5891212]
AP - US 931295/97 19970916 [1997US-0931295]
DT - US-P
ACT - 19970916 US/AE-A
APPLICATION DATA (PATENT)
US 931295/97 19970916 [1997US-0931295]

19970916 US/AS02
ASSIGNMENT OF ASSIGNOR'S INTEREST
AEROQUIP CORPORATION 3000 STRAYER ROAD MAUMEE, OHIO 43537 *
TANG, JIE : 19970912; HESS, GARY B. : 19970912; MUSZYNSKI, MARK D. :
19970912; GOEHRING, THOMAS S. : 19970912

19990406 US/A
PATENT

19990907 US/CC
CERTIFICATE OF CORRECTION

20020521 US/RF
REISSUE APPLICATION FILED
20010406

UP - 2002-22

1 / 1 CRXX - ©CLAIMS/RRX

PN - 5,891,212 A 19990406 [US5891212]
PA - Aeroquip Corp
ACT - 20001030 REASSIGNED
ASSIGNMENT OF ASSIGNOR'S INTEREST

Assignor: EATON AEROQUIP INC. DATE SIGNED: 09/29/2000

Assignee: FRY'S METALS, INC. D/B/A COOKSON SEMICONDUCTOR
PACKAGING MATERIALS SUITE 150 225 FOXBOROUGH BOULEVARD
FOXBOROUGH, MASSACHUSETTS 02035

Reel 011231/Frame 0001

Contact: MINTZ, LEVIN ET AL. CAROL H. PETERS ONE FINANCIAL CENTER
BOSTON, MA 02111

20010406 REISSUE REQUESTED
ISSUE DATE OF O.G.: 20020521
REISSUE REQUEST NUMBER: 09/827605
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 1742

Reissue Patent Number:

1 / 2 PAST - ©Thomson Derwent

AN - 200221-002004
PN - 5891212 A [US5891212]
OG - 2002-05-21
ACT - REISSUE APPLICATION FILED

2 / 2 PAST - ©Thomson Derwent

AN - 199936-000196
PN - 5891212 A [US5891212]
OG - 1999-09-07
ACT - CERTIFICATE OF CORRECTION

Query/Command : FILE INPADOC

PLUSPAT - Time in minutes : 2,05

The cost estimation below is based on Questel's standard price list

Estimated cost :	4.51 USD
Records displayed and billed : 1	
Estimated cost :	1.10 USD
Cost estimated for the last database search :	5.61 USD
Estimated total session cost :	6.58 USD

LGST - Time in minutes : 0,13

The cost estimation below is based on Questel's standard price list

Estimated cost :	0.14 USD
Records displayed and billed : 1	
Estimated cost :	0.57 USD
Legal-Status informations : 1	
Estimated cost :	4.92 USD
Cost estimated for the last database search :	5.63 USD
Estimated total session cost :	12.21 USD

CRXX - Time in minutes : 0,03

The cost estimation below is based on Questel's standard price list

Estimated cost :	0.04 USD
Records displayed and billed : 1	
Estimated cost :	5.00 USD
Legal-Status informations : 1	
Estimated cost :	4.92 USD
Cost estimated for the last database search :	9.96 USD
Estimated total session cost :	22.17 USD

PAST - Time in minutes : 0,11

The cost estimation below is based on Questel's standard price list

Estimated cost :	0.21 USD
Records displayed and billed : 2	
Estimated cost :	11.22 USD
Legal-Status informations : 1	
Estimated cost :	4.92 USD
Cost estimated for the last database search :	16.35 USD
Estimated total session cost :	38.52 USD

LITA - Time in minutes : 0,07

The cost estimation below is based on Questel's standard price list

	Estimated cost :	0.13 USD
Cost estimated for the last database search :		0.13 USD
Estimated total session cost	:	38.65 USD

Selected file: INPADOC

You are now connected to INPADOC
Covers 1968/1973 thru weekly updates (2002-28)
For information on content, ..INFO INPD.

Search statement 1

Query/Command : FAM US5891212/PN

1 Patent Groups

**** SS 1: Results 6**

Search statement 2

Query/Command : FAMSTATE NONSTOP

1 / 6 INPADOC - ©INPADOC

PN	-	CN 1262636 T 20000809 [CN1262636]
TI	-	APPARATUS AND METHOD FOR MAKING UNIFORMLY SIZED AND SHAPED SPHERES
IN	-	TANG J [US]; HESS G B [US]; MUSZYNSKI M D [US]
PA	-	AEROQUIP CORP [US]
AP	-	CN 98807037/98-A 19980605 [1998CN-0807037]
PR	-	US 892145/97-A 19970714 [1997US-0892145] US 931295/97-A 19970916 [1997US-0931295]
IC	-	B22F-009/08; B01J-002/18

2 / 6 INPADOC - ©INPADOC

PN - EP 996521 A1 20000503 [EP-996521]
TI - APPARATUS AND METHOD FOR MAKING UNIFORMLY SIZED AND SHAPED SPHERES
LA - ENG
IN - TANG JIE [US]; HESS GARY B [US]; MUSZYNSKI MARK D [US]; GOEHRING THOMAS S [US]
PA - AEROQUIP CORP [US]
AP - EP 98925258/98-A 19980605 [1998EP-0925258]
PR - WO 9811588/98(US)-W 19980605 [1998WO-US11588]
US 892145/97-A 19970714 [1997US-0892145]
US 931295/97-A 19970916 [1997US-0931295]
IC - B22F-009/08; B01J-002/18
DS - AT* BE* CH* CY* DE* DK* ES* FI* FR* GB* IE* IT* LI* NL* SE*

1 / 1 LEGALI - ©LEGSTAT

PN - EP 996521 [EP-996521]
AP - EP 98925258/98 19980605 [1998EP-0925258]
DT - EP-P
ACTE - 19980605 EP/AE-A
EP-APPLICATION
EP 98925258/98 19980605 [1998EP-0925258]

20000503 EP/AK-A1 [+]
DESIGNATED CONTRACTING STATES IN AN APPLICATION WITH SEARCH REPORT:
AT BE CH CY DE DK ES FI FR GB IE IT LI NL SE

20000503 EP/A1 [+]
PUBLICATION OF APPLICATION WITH SEARCH REPORT

20000503 EP/17P [+]
REQUEST FOR EXAMINATION FILED
19991217

20000830 EP/RIN1
INVENTOR (CORRECTION)
TANG, JIE * HESS, GARY, B. * MUSZYNSKI, MARK, D. * GOEHRING, THOMAS, S.

20020522 EP/17Q [+]
FIRST EXAMINATION REPORT
20020410

UP - 2002-21

3 / 6 INPADOC - ©INPADOC

PN - JP 2002509580 T2 20020326 [JP2002509580]
AP - JP 507149/99-A 19980605 [1999JP-0507149]
PR - US 892145/97-A 19970714 [1997US-0892145]
US 931295/97-A 19970916 [1997US-0931295]
WO 9811588/98(US)-W 19980605 [1998WO-US11588]
IC - B22F-009/08; B01J-002/02; B01J-002/18

4 / 6 INPADOC - ©INPADOC

PN - US 6083454 A 20000704 [US6083454]
TI - APPARATUS AND METHOD FOR MAKING UNIFORMLY SIZED AND SHAPED SPHERES
IN - TANG JIE [US]; HESS GARY B [US]; MUSZYNSKI MARK D [US]; GOEHRING THOMAS S [US]
PA - AEROQUIP CORP [US]
AP - US 212555/98-A 19981216 [1998US-0212555]
PR - US 212555/98-A 19981216 [1998US-0212555]
US 931295/97-A3 19970916 [1997US-0931295]
US 892145/97-B2 19970714 [1997US-0892145]
IC - G21C-001/00

1 / 1 LEGALI - ©LEGSTAT

PN - US 6083454 [US6083454]
AP - US 212555/98 19981216 [1998US-0212555]
DT - US-P
ACTE - 19981216 US/AE-A
APPLICATION DATA (PATENT)
US 212555/98 19981216 [1998US-0212555]

20000704 US/A
PATENT
UP - 2000-31

5 / 6 INPADOC - ©INPADOC

PN - US 5891212 A 19990406 [US5891212]
TI - APPARATUS AND METHOD FOR MAKING UNIFORMLY
IN - TANG JIE [US]; HESS GARY B [US]; MUSZYNSKI MARK D [US]; GOEHRING
THOMAS S [US]
PA - AEROQUIP CORP [US]
AP - US 931295/97-A 19970916 [1997US-0931295]
PR - US 931295/97-A 19970916 [1997US-0931295]
US 892145/97-B2 19970714 [1997US-0892145]
IC - B06B-001/20

1 / 1 LEGALI - ©LEGSTAT

PN - US 5891212 [US5891212]
AP - US 931295/97 19970916 [1997US-0931295]
DT - US-P
ACTE - 19970916 US/AE-A
APPLICATION DATA (PATENT)
US 931295/97 19970916 [1997US-0931295]

19970916 US/AS02
ASSIGNMENT OF ASSIGNOR'S INTEREST
AEROQUIP CORPORATION 3000 STRAYER ROAD MAUMEE, OHIO 43537 *
TANG, JIE : 19970912; HESS, GARY B. : 19970912; MUSZYNSKI, MARK D. :
19970912; GOEHRING, THOMAS S. : 19970912

19990406 US/A
PATENT

19990907 US/CC
CERTIFICATE OF CORRECTION

20020521 US/RF
REISSUE APPLICATION FILED
20010406
UP - 2002-22

6 / 6 INPADOC - ©INPADOC

PN - WO 9903626 A1 19990128 [WO9903626]
TI - APPARATUS AND METHOD FOR MAKING UNIFORMLY SIZED AND SHAPED SPHERES
LA - ENG
IN - TANG JIE; HESS GARY B; MUSZYNSKI MARK D; GOEHRING THOMAS S
PA - AEROQUIP CORP [US]
AP - WO US 9811588/98(US)-A 19980605 [1998WO-US11588]
PR - US 892145/97-A 19970714 [1997US-0892145]
US 931295/97-A 19970916 [1997US-0931295]
IC - B22F-009/08; B01J-002/18
DS - CN* JP* KR* SG* AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

1 / 2 LEGALI - ©LEGSTAT

PN - KR 2000700390 [KR2000700390]
AP - KR 2000700390 - [2000KR-0700390]
DT - KR-A
ACTE - 20000113 KR/REFW-P
CORRESPONDS TO PCT APPLICATION
<WO 9903626> [WO9903626]
UP - 2001-39

2 / 2 LEGALI - ©LEGSTAT

PN - WO 9903626 [WO9903626]
AP - WO 9811588/98(US) 19980605 [1998WO-US11588]
DT - WO-P
ACTE - 19980605 WO/AE-A
APPLICATION DATA
WO 9811588/98(US) 19980605 [1998WO-US11588]

19990128 WO/AK-A1 [+]
DESIGNATED STATES CITED IN A PUBLISHED APPLICATION WITH SEARCH
REPORT
CN JP KR SG

19990128 WO/AL-A1 [+]
DESIGNATED COUNTRIES FOR REGIONAL PATENTS CITED IN A PUBLISHED
APPLICATION WITH SEARCH REPORT
AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

19990128 WO/A1 [+]
PUBLICATION OF THE INTERNATIONAL APPLICATION WITH THE
INTERNATIONAL SEARCH REPORT

19990512 WO/121
EP: THE EPO HAS BEEN INFORMED BY WIPO THAT EP WAS DESIGNATED IN
THIS APPLICATION

19990701 WO/DFPE
REQUEST FOR PRELIMINARY EXAMINATION FILED PRIOR TO EXPIRATION
OF 19TH MONTH FROM PRIORITY DATE

20000113 WO/ENP-A
ENTRY INTO THE NATIONAL PHASE IN:
<KR 002000700390>

UP - 2001-39

PATNO IS 5891212

DATE: AUGUST 1, 2002
LIBRARY: PATENT
FILE: ALL

Your search request is:
PATNO IS 5891212

Number of PATENTS found with your search request through:
LEVEL 1... 1

Your search request has found 1 PATENT through Level 1.
To DISPLAY this PATENT press either the KWIC, FULL, CITE or SEGMENTS key.
To MODIFY your search request, press the M key (for MODIFY) and then the ENTER key.

For further explanation, press the H key (for HELP) and then the ENTER key.

LEVEL 1 - 1 PATENT

1. 5891212 , April 6, 1999 , Apparatus and method for making uniformly , Tang, Jie, Ann Arbor, MI; Hess, Gary B., Onsted, MI; Muszynski, Mark D., Manchester, MI; Goehring, Thomas S., Jackson, MI, 08931295, Aeroquip Corporation, Maumee, OH

CORE TERMS: sphere, droplet, solidification, crucible, heat, stream, stimulation, medium, charging, actuator ...

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT

5891212

<=1> GET 1st DRAWING SHEET OF 3

April 6, 1999

Apparatus and method for making uniformly

REISSUE: April 6, 2001 - Reissue Application filed Ex. Gp.: 1742; Re. S.N.
09/827,605 May 21, 2002

APPL-NO: 08931295

FILED-DATE: September 16, 1997

GRANTED-DATE: April 6, 1999

CORE TERMS: sphere, droplet, solidification, crucible, heat, stream,
stimulation, medium, charging, actuator ...

ENGLISH-ABST:

Uniform sized and shaped spheres are formed by applying a minute periodic disturbance to a low viscosity liquid material. Pressure forces the material through at least one orifice in a crucible as a steady laminar stream. The stream enters an enclosed controlled temperature solidification environment which contains at least one heat transfer medium. A charging means is applied to the stream as the stream exits the crucible and breaks into a plurality of spheres to deflect the spheres as they pass through an electric field. The enclosed controlled temperature solidification environment cools and substantially solidifies the spheres.

5891212 OR 5,891.212

Your search request has found no CASES.

To edit the above request, use the arrow keys. Be sure to move the cursor to the end of the request before you enter it.

To enter a new search request, type it and press the ENTER key.

What you enter will be Search Level 1.

For further explanation, press the H key (for HELP) and then the ENTER key.